

Appl. No. 09/645,225
Amdt. Dated Sept. 16, 2003
Reply to Office action of August 7, 2003

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

Claim 1 (previously presented): An optical interference coating for reflecting infrared radiation and transmitting visible light comprising alternating layers of high index of refraction material and low index of refraction material, the total number of said layers being greater than 60, said optical interference coating having sufficiently low tensile stress such that said optical interference coating is not susceptible to cohesive failure from tensile stress, each of said alternating layers of high index of refraction material and low index of refraction material being a separate and distinct layer from adjacent layers.

Claim 2 (original): An optical interference coating as in claim 1, wherein the high index of refraction material is tantalum pentoxide and the low index of refraction material is silica.

Claim 3 (original): An optical interference coating as in claim 1, wherein a ratio of the total thickness of all of the layers of high index of refraction material to the total thickness of all of the layers of low index of refraction material, r , is at least 0.9.

Claim 4 (original): An optical interference coating as in claim 1, wherein a ratio of the total thickness of all of the layers of high index of refraction material to the total

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thickness of all of the layers of low index of refraction material, r , is at least 0.95.

Claim 5 (original): An optical interference coating as in claim 1, wherein a ratio of the total thickness of all of the layers of high index of refraction material to the total thickness of all of the layers of low index of refraction material, r , is at least 1.0.

Claim 6 (original): An optical interference coating as in claim 1, wherein a ratio of the total thickness of all of the layers of high index of refraction material to the total thickness of all of the layers of low index of refraction material, r , is at least 1.2.

Claims 7-8: (cancelled)

Claim 9 (original): An optical interference coating as in claim 1, wherein the total number of layers is greater than 70.

Claim 10 (original): An optical interference coating as in claim 1, wherein the total number of layers is 78.

Claim 11 (original): An optical interference coating as in claim 1, wherein the total number of layers is less than 200.

Claim 12 (previously presented): An electric lamp comprising a light

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transmissive envelope containing an electric light source within, wherein at least a portion of said envelope is coated with an optical interference coating for reflecting infrared radiation and transmitting visible light radiation, said coating comprising alternating layers of high index of refraction material and low index of refraction material, the total number of said layers being greater than 60, said optical interference coating having sufficiently low tensile stress such that said optical interference coating is not susceptible to cohesive failure from tensile stress, each of said alternating layers of high index of refraction material and low index of refraction material being a separate and distinct layer from adjacent layers.

Claim 13 (original): An electric lamp as in claim 12, wherein the high index of refraction material is tantalum pentoxide and the low index of refraction material is silica.

Claim 14 (original): An electric lamp as in claim 12, wherein a ratio of the total thickness of all of the layers of high index of refraction material to the total thickness of all of the layers of low index of refraction material, r , is at least 0.9.

Claim 15 (original): An electric lamp as in claim 12, wherein the total number of layers is 78.

Claim 16 (original): An electric lamp as in claim 12, wherein the total number of

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layers is less than 200.

Claim 17 (previously presented): An optical interference coating as in claim 1, wherein a ratio of the total thickness of all of the layers of high index of refraction material to the total thickness of all of the layers of low index of refraction material, r , is at least 0.91, and the total number of said layers is at least 78.

Claim 18 (currently amended): An optical interference coating as in claim 1, wherein a ratio of the total thickness of all of the layers of high index of refraction material to the total thickness of all of the layers of low index of refraction material, r , is at least 0.9, ~~and the total number of said layers is greater than 55.~~

Claim 19 (previously presented): An electric lamp as in claim 12, wherein a ratio of the total thickness of all of the layers of high index of refraction material to the total thickness of all of the layers of low index of refraction material, r , is at least 0.91, and the total number of said layers is at least 78.

Claim 20 (currently amended): An electric lamp as in claim 12, wherein a ratio of the total thickness of all of the layers of high index of refraction material to the total thickness of all of the layers of low index of refraction material, r , is at least 0.9, ~~and the total number of said layers is greater than 55.~~

Claim 21 (currently amended): An optical interference coating for reflecting

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infrared radiation and transmitting visible light comprising alternating layers of high index of refraction material and low index of refraction material, each of said alternating layers of high index of refraction material and low index of refraction material being a separate and distinct layer from adjacent layers, the total number of said layers of high index of refraction material and low index of refraction material being greater than 51, wherein a ratio of the total thickness of all of the layers of high index of refraction material to the total thickness of all of the layers of low index of refraction material, r , is greater than 0.76 at least 0.9.

Claim 22 (canceled).

Claim 23 (previously presented): An optical interference coating according to claim 21, said ratio, r , being at least 0.95.

Claim 24 (previously presented): An optical interference coating according to claim 21, said ratio, r , being at least 1.0.

Claim 25 (canceled).

Claim 26 (previously presented): An optical interference coating according to claim 21, the total number of layers of high index of refraction material and low index of refraction material being greater than 55.

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Claim 27 (currently amended): An electric lamp comprising a light transmissive envelope containing an electric light source within, wherein at least a portion of said envelope is coated with an optical interference coating for reflecting infrared radiation and transmitting visible light radiation, said coating comprising alternating layers of high index of refraction material and low index of refraction material, each of said alternating layers of high index of refraction material and low index of refraction material being a separate and distinct layer from adjacent layers, the total number of said layers of high index of refraction material and low index of refraction material being greater than 51, wherein a ratio of the total thickness of all of the layers of high index of refraction material to the total thickness of all of the layers of low index of refraction material, r , is greater than 0.76 at least 0.9.

Claim 28 (canceled).

Claim 29 (previously presented): An electric lamp according to claim 27, said ratio, r , being at least 0.95.

Claim 30 (previously presented): An electric lamp according to claim 27, said ratio, r , being at least 1.0.

Claim 31 (canceled).

Claim 32 (previously presented): An electric lamp according to claim 27, the total number of layers of high index of refraction material and low index of refraction material being greater than 55.

Claim 33 (previously presented): An optical interference coating according to claim 21, the total number of layers of high index of refraction material and low index

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of refraction material being greater than 60.

Claim 34 (previously presented): An optical interference coating according to claim 21, said ratio, r , being effective to result in sufficiently low tensile stress in said optical interference coating such that said optical interference coating is not susceptible to cohesive failure from tensile stress.

Claim 35 (previously presented): An optical interference coating according to claim 21, the total number of layers of high index of refraction material and low index of refraction material being greater than 60, and said ratio, r , being effective to result in sufficiently low tensile stress in said optical interference coating such that said optical interference coating is not susceptible to cohesive failure from tensile stress.

Claim 36 (previously presented): An electric lamp according to claim 27, the total number of layers of high index of refraction material and low index of refraction material being greater than 60.

Claim 37 (previously presented): An electric lamp according to claim 27, said ratio, r , being effective to result in sufficiently low tensile stress in said optical interference coating such that said optical interference coating is not susceptible to cohesive failure from tensile stress.

Claim 38 (previously presented): An electric lamp according to claim 27, the total number of layers of high index of refraction material and low index of refraction material being greater than 60, and said ratio, r , being effective to result in sufficiently low tensile stress in said optical interference coating such that said optical interference coating is not susceptible to cohesive failure from tensile stress.